

**RCW 78.44.141 Reclamation—Minimum standards—Waiver.**

Reclamation of surface mines permitted after June 30, 1993, and reclamation of surface mine segments addressed by reclamation plans modified after June 30, 1994, shall meet the following minimum standards except as waived in writing by the department.

(1) Prior to surface mining, permit holders shall carefully stockpile all topsoil on the site for use in reclamation, or immediately move topsoil to reclaim adjacent segments, except when the approved subsequent use does not require replacing the topsoil. Topsoil needed for reclamation shall not be sold as a mineral nor mixed with sterile soils. Stockpiled materials used as screening shall not be used for reclamation until such time as the appropriate county or municipal government has given its approval.

(2) The department may require that clearly visible, permanent monuments delineating the permit boundaries and maximum extent of the disturbed area be set at appropriate places around the mine site. The permit holder shall maintain the monuments until termination of the reclamation permit.

(3) All minimum reclamation standards may be waived in writing by the department in order to accommodate unique and beneficial reclamation schemes such as parks, swimming facilities, buildings, and wildlife reserves. Such waivers shall be granted only after written approval by the department of a reclamation plan describing the variances to the minimum reclamation standards, receipt of documentation of SEPA compliance, and written approvals from the landowner and by the local land use authority.

(4) All surface-mined slopes shall be reclaimed to the following minimum standards:

(a) In surface mines in soil, sand, gravel, and other unconsolidated materials, all reclaimed slopes shall:

- (i) Have varied steepness;
- (ii) Have a sinuous appearance in both profile and plan view;
- (iii) Have no large rectilinear topographic elements;
- (iv) Generally have slopes of between 2.0 and 3.0 feet horizontal to 1.0 foot vertical or flatter except in limited areas where steeper slopes are necessary in order to create sinuous topography and to control drainage;

(v) Not exceed 1.5 feet horizontal to 1.0 foot vertical except as necessary to blend with adjacent natural slopes;

(vi) Be compacted if significant backfilling is required to produce the final reclaimed slopes and if the department determines that compaction is necessary.

(b) Slopes in consolidated materials shall have no prescribed slope angle or height, but where a severely hazardous condition is created by mining and that is not indigenous to the immediate area, the slopes shall not exceed 2.0 feet horizontal to 1.0 foot vertical. Steeper slopes shall be acceptable in areas where evidence is submitted that demonstrates that the geologic or topographic characteristics of the site preclude reclamation of slopes to such angle or height or that such slopes constitute an acceptable subsequent use under local land use regulations.

(c) Surface mines in which the seasonal or permanent water tables have been penetrated, thereby creating swamps, ponds, or lakes useful for recreational, wildlife habitat, water quality control, or other beneficial wetland purposes shall be reclaimed in the following manner:

(i) For slopes that are below the permanent water table in soil, sand, gravel, and other unconsolidated materials, the slope angle shall be no steeper than 1.5 feet horizontal to 1.0 foot vertical;

(ii) Generally, solid rock banks shall be shaped so that a person can escape from the water, however steeper slopes and lack of water egress shall be acceptable in rural, forest, or mountainous areas or where evidence is provided that such slopes would constitute an acceptable subsequent use under local land use regulations;

(iii) Both standpipes and armored spillways or other measures to prevent undesirable overflow or seepage shall be provided to stabilize all such water bodies within the disturbed area; and

(iv) Where lakes, ponds, or swamps are created, the permit holder shall provide measures to establish a beneficial wetland by developing natural wildlife habitat and incorporating such measures as irregular shoreline configurations, sinuous bathymetry and shorelines, varied water depths, peninsulas, islands, and subaqueous areas less than 1.5 foot deep during summer low-water levels. Clay-bearing material placed below water level may be required to avoid creating sterile wetlands.

(d) Final topography shall generally comprise sinuous contours, chutes and buttresses, spurs, and rolling mounds and hills, all of which shall blend with adjacent topography to a reasonable extent. Straight planar slopes and right angles should be avoided.

(e) The floors of mines shall generally grade gently into postmining drainages to preclude sheet-wash erosion during intense precipitation, except where backgrading is appropriate for drainage control, to establish wetlands, or to trap sediment.

(f) Topsoil shall be restored as necessary to promote effective revegetation and to stabilize slopes and mine floors. Where limited topsoil is available, topsoil shall be placed and revegetated in such a way as to ensure that little topsoil is lost to erosion.

(g) Where surface mining has exposed natural materials that may create polluting conditions, including but not limited to acid-forming coals and metalliferous rock or soil, such conditions shall be addressed according to a method approved by the department. The final ground surface shall be graded so that surface water drains away from these materials.

(h) All grading and backfilling shall be made with nonnoxious, noncombustible, and relatively incompactible solids unless the permit holder provides:

(i) Written approval from all appropriate solid waste regulatory agencies; and

(ii) Any and all revisions to such written approval during the entire time the reclamation permit is in force.

(i) Final reclaimed slopes should be left roughly graded, preserving equipment tracks, depressions, and small mounds to trap clay-bearing soil and promote natural revegetation. Where reasonable, final equipment tracks should be oriented in order to trap soil and seeds and to inhibit erosion.

(j) Pit floors should be bulldozed or ripped to foster revegetation.

(5) Drainages shall be graded and contain adequate energy dissipation devices so that essentially natural conditions of water velocity, volume, and turbidity are reestablished within six months of reclamation of each segment of the mine. Ditches and other artificial drainages shall be constructed on each reclaimed segment to control surface water, erosion, and siltation and to direct runoff to a safe outlet. Diversion ditches including but not limited to channels,

flumes, tightlines and retention ponds shall be capable of carrying the peak flow at the mine site that has the probable recurrence frequency of once in twenty-five years as determined from data for the twenty-five year, twenty-four hour precipitation event published by the national oceanic and atmospheric administration. The grade of such ditches and channels shall be constructed to limit erosion and siltation. Natural and other drainage channels shall be kept free of equipment, wastes, stockpiles, and overburden.

(6) Impoundment of water shall be an acceptable reclamation technique provided that approvals of other agencies with jurisdiction are obtained and:

(a) Proper measures are taken to prevent undesirable seepage that could cause flooding outside the permitted area or adversely affect the stability of impoundment dikes or adjacent slopes;

(b) Both standpipes and armored spillways or other measures necessary to control overflow are provided.

(7) Revegetation shall be required as appropriate to stabilize slopes, generate new topsoil, reduce erosion and turbidity, mask rectilinear contours, and restore the scenic value of the land to the extent feasible as appropriate to the approved subsequent use. Although the scope of and necessity for revegetation will vary according to the geography, precipitation, and approved subsequent use of the site, the objective of segmental revegetation is to reestablish self-sustaining vegetation and conditions of slope stability, surface water quality, and appearance before release of the reclamation permit. Revegetation shall normally meet the following standards:

(a) Revegetation shall commence during the first proper growing season following restoration of slopes on each segment unless the department has granted the permit holder a written time extension.

(b) In eastern Washington, the permit holder may not be able to achieve continuous ground cover owing to arid conditions or sparse topsoil. However, revegetation shall be as continuous as reasonably possible as determined by the department.

(c) Revegetation generally shall include but not be limited to diverse evergreen and deciduous trees, shrubs, grasses, and deep-rooted ground cover.

(i) For western Washington, nitrogen-fixing species including but not limited to alder, white clover, and lupine should be included in dry areas. In wet areas, tubers, sedges, wetland grasses, willow, cottonwood, cedar, and alder are appropriate.

(ii) In eastern Washington, lupine, white clover, Russian olive, black locust, junipers, and pines are among appropriate plants. In wet areas, cottonwood, tubers, and sedges are appropriate.

(d) The requirements for revegetation may be reduced or waived by the department where erosion will not be a problem in rural areas where precipitation exceeds thirty inches per annum, or where revegetation is inappropriate for the approved subsequent use of the surface mine.

(e) In areas where revegetation is critical and conditions are harsh, the department may require irrigation, fertilization, and importation of clay or humus-bearing soils to establish effective vegetation.

(f) The department may refuse to release a reclamation permit or performance security until it deems that effective revegetation has commenced. [1993 c 518 § 21.]

~~Captions—Severability—Effective date—1993 c 518~~: See notes following RCW 78.44.010.